

What is claimed is:

1. A manufacturing method of a dispersion flattened fiber with high negative dispersion ranging from about -20 ps/nm/km to about -60 ps/nm/km, comprising the steps of:

- 5 (a) preparing a silica tube;
- (b) cleaning the silica tube;
- (c) forming a cladding on an inner peripheral surface of the silica tube;
- (d) forming a first ring-type core on an inner peripheral surface of the cladding;
- 10 (e) forming a first low refractive region on an inner peripheral surface of the first ring-type core, wherein the refractive index of the first low refractive region is lower than that of the cladding;
- 15 (f) forming a second ring-type core on an inner peripheral surface of the first low refractive region;
- (g) forming a second low refractive region on an inner peripheral surface of the second ring-type core, wherein the refractive index of the second low refractive region is lower than that of the cladding;
- 20 (h) forming ~~the~~ a central core on an inner peripheral surface of the second low refractive region;
- (i) heating the silica tube, thereby forming a preform of the dispersion flattened fiber; and
- 25 (j) extracting the dispersion flattened fiber from the perform.

2. The method of claim 1, wherein the silica tube is prepared on a board for a modified chemical vapor deposition at step (a).

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3. The method of claim 1, wherein the silica tube is heated under the temperature of about 1900°C at step (b).

4. The method of claim 1, wherein the cladding has the same refractive index as the silica tube.

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5. The method of claim 1, wherein the cladding is formed using  $\text{SiCl}_4$ .

6. The method of claim 1, wherein the first ring-type core having a refractive index higher than that of the cladding is formed by using  $\text{GeCl}_4$  or  $\text{POCl}_3$  together with  $\text{SiCl}_4$ .

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7. The method of claim 1, wherein  $\text{C}_2\text{F}_6$  or  $\text{SiF}_4$  flows together with  $\text{SiCl}_4$  into the silica tube in order to form the first low refractive region.

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8. The method of claim 1, wherein the second ring-type core having a refractive index higher than that of the cladding is formed by having  $\text{GeCl}_4$  or  $\text{POCl}_3$  with  $\text{SiCl}_4$  gas flow into the silica tube.

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9. The method of claim 1, wherein the second low refractive region is formed by having  $C_2F_6$  or  $SiF_4$  flow together with  $SiCl_4$ .

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10. The method of claim 1, wherein  $SiCl_4$  and  $GeCl_4$  are provided into the silica tube to form the central core at step (h).

10 11. The method of claim 1, wherein the silica tube is heated under the temperature of  $2000^{\circ}C$  or beyond at step (i).

12. The method of claim 1, further comprising the step of  
15 (k) jacketing the silica tube on the preform after the step (i).